javascript

what is javascript?

- an object-based programming language
- embedded in HTML
- enables you to create interactive web pages

why javascript?

- great way to enhance your web pages
- introduce you to programming: the expression of algorithms in a computer-executable language!
- illustrate central programming concepts such as: the importance of structuring data and key “control constructs”

examples

- mouseover:
- quiz:

mouseover

```
<html>
<head> <title>Shelly Zhao's simple Web Page</title> </head>
<body>
<h1>Welcome to Shelly's Web Page</h1>
<p> <a onMouseOver="document.images[0].src = 'logoUBC.jpg';" onMouseOut="document.images[0].src = 'monkey.gif';"><img src="monkey.gif" align="left" hspace="0" width="80" height="100"></a></p>
</body>
</html>
```

javascript is case sensitive

- this part of the code instructs the web browser to display the picture “logoUBC.jpg” when the mouse is moved over the first image of the HTML page
- images are numbered 0,1,2,...
onMouseOut="document.images[0].src = 'monkey.gif';"

- this part of the code instructs the web browser to display the picture "monkey.gif" when the mouse is moved off the first image of the HTML page

<img src="monkey.gif" align="left" hspace="0" width="80" height="100">

- this is standard HTML code that places an image in the HTML page; this image appears until the first time that the mouse rolls over the image

**quiz using javascript**


- when "wmst201quiz.html" is opened in the web browser, the quiz is presented

- when the “submit” button is clicked, a new page, “wmst201quiz_result.html”, is opened

**wmst201quiz.htm**

- this file uses familiar HTML code for generating a table

- new things to note:
  - HTML forms
  - input buttons for receiving inputs for the form

**typical row of quiz table**

```
<tr>
  <td height="24"></td>
  <td height="24"><input type=radio name=2 value=0> Word</td>
  <td height="24"><input type=radio name=2 value=1> &nbsp;Excel</td>
  <td height="24"><input type=radio name=2 value=2> &nbsp;PowerPoint</td>
  <td height="24"><input type=radio name=2 value=3> &nbsp;Internet Explorer</td>
</tr>
```

- type, name, and value are *attributes* of an input

**input type = radio**

- circular buttons resemble old car radios where exactly one button can be pressed at any time

  ![radio button options]

- in the quiz, for each name, at most one button with that name can be selected
submit button

```html
<tr>
  <td height="28"></td>
  <td colspan=3 height="28">
    <input type=submit value="Hand it in!"
           name=submit>
  </td>
</tr>
```

- when the submit button is clicked, processing of the information collected begins

html forms

- the file “wmst201quiz.html” contains the line
  ```html
  <form name=wmst201quiz method=get
       action=wmst201quiz_result.html>
  ```
- this line tells the browser that
  - the document contains a form
  - the information should be collected by extending the URL
  - when the information is collected, the file “wmst201quiz_result.html” should be opened

submitting the quiz answers

- clicking the submit button causes the “wmst201quiz_results.html” to be opened
- (extended) URL looks like:
  http://www.ugrad.cs.ubc.ca/~cs101/current-term/Labs/JavaScript/wmst201quiz_result.html?0=1&1=2&3=3&3=3&4=2&5=1&6=0&submit=Hand+it+in%21
- note that after the file name, the quiz answers are listed as part of the extended URL!

information flow in quiz example

1. user: click on quiz page/link
2. request quiz.html
3. respond to request
4. return quiz.html
5. open quiz page
6. user: play with quiz
7. user: click submit button
8. request quiz_results.html
9. respond to request
10. return quiz_results.html
11. interpret and display quiz_results page

client-side

network

server-side